Gender differences in adolescents’ responses to themes of relaxation in cigarette advertising: Relationship to intentions to smoke

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Abstract

Studies have shown that increased exposure to cigarette advertising increases adolescents’ risk of smoking and moreover, that gender may play an important role in moderating how cigarette advertisements are viewed and processed. However, information about the particular features of cigarette advertising that interact with gender to promote smoking among adolescents is scarce. The purpose of this study was to examine if gender moderates the degree to which the relaxation valence (i.e., degree to which relaxing themes are emphasized) of cigarette advertisements is related to smoking intentions in a sample of never smoking adolescents. Regardless of brand type (of the seven brands studied), cigarette advertisements that displayed highly relaxing images were associated with increased intentions to smoke among female adolescents only. These results have implications for understanding what features of cigarette advertisements have the most influence among different groups of adolescents.

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1. Introduction

Smoking prevalence rates among middle and high school students have diminished since the late 1990s. However, the most recent national data suggest that this rate of decline has slowed in the last...
3 years (Johnston, O’Malley, & Bachman, 2005). The current (as of this writing) 30-day smoking prevalence rate (those reporting smoking on one or more of the 30 days prior to the survey) stands at 9.3% of 8th graders and 23% of 12th graders (Johnston et al., 2005). More broadly, the World Health Organization (WHO, 2002) has estimated that lifetime use of tobacco will result in approximately 250 million tobacco-related deaths of children and young people alive in the world today if current patterns persist. Clearly, then, it remains important for the public health to determine what promotes cigarette use among adolescents in order to develop and refine smoking prevention programs.

Cigarette advertising is one environmental source that likely influences future smoking among adolescents (Wakefield, Flay, Nichter, & Giovino, 2003). The tobacco industry, as whole, spent over 15 billion dollars on advertising and marketing in 2003 (Federal Trade Commission, 2005). A recent study from the World Health Organization found that 73% of children and adolescents worldwide had been exposed to print media cigarette advertisements in the past 30 days (WHO, 2002). Theory suggests that cigarette advertising probably has its most potent effects on promoting smoking initiation among adolescents (Flay, 1993; Flay & Petraitis, 1994; Levanthal & Cleary, 1980; Shadel, Niaura, & Abrams, 2001; see also Wakefield et al., 2003) and studies have suggested that increased awareness of, receptivity to, and liking of cigarette advertising all contribute to increases in smoking initiation among adolescents (Choi, Ahluwalia, Harris, & Okuyemi, 2002; Evans, Farkas, Gilpin, Berry, & Pierce, 1995; Pierce et al., 1991; Pierce, DiStafano, Jackson, & White, 2002; Sargent et al., 2000). Indeed, Pierce, Choi, Gilpin, Farkas, and Berry (1998) found that “the percentage of experimentation attributable to tobacco advertising and promotional activities is 34.3%”, based on calculations from a longitudinal survey conducted on 12 to 17 year-olds. This percentage is equal to 17% of the overall population for this age group.

Despite what theory predicts and data such as these demonstrate, there is a paucity of information about how individual differences among adolescents, like gender, and features of cigarette advertising interact to contribute to the relationship between cigarette advertising and adolescent smoking (Shadel et al., 2001; cf., Shadel, Niaura, & Abrams, 2004b). Both individual-level and communication-level (i.e., advertisement) factors are important in studies of persuasion and communication (Petty & Wegener, 1999). It stands to reason, then, that both are important to consider when studying adolescents’ responses to cigarette advertising (Shadel et al., 2001).

Some insight into how cigarette advertisements might be constructed to appeal differentially to males and females has come from careful examination of tobacco company documents relating to advertising and marketing. Tobacco companies seem to have designed different cigarette brands and marketing campaigns to appeal to consumer groups based on so-called psychological and psychosocial “needs” of those groups, such as smoking to relieve stress (Le Cook, Wayne, Keithly, & Connolly, 2003). In particular, targeting consumers appears also to have occurred when manufacturing and marketing cigarettes for each gender. Carpenter, Wayne, & Connolly (2005) found that the tobacco industry has targeted women with specific cigarette brands (e.g. Virginia Slims) and paired these “feminine style” cigarettes with advertisements promoting female liberation, glamour, success and thinness. Indeed, research from outside of the tobacco industry seems to underscore the success of these gender-segmenting strategies in the field. Major marketing expenditure shifts toward a female market have been historically associated with increases in smoking among young women (Pierce, Lee, & Gilpin, 1994; see also Boyd, Boyd, & Cash, 1999–2000), adolescent females seem to be more responsive to cigarette advertising imagery in general (Covell, Dion, & Dion, 1994), and cigarette advertisements that emphasize more feminine images are associated with more positive affective reactions among adolescent females compared to those advertisements that emphasize more masculine images (Shadel, Niaura, &
Abrams, 2004a). However, the field is still lacking in critical information about how some of the many other, non-gender-related themes displayed by cigarette advertisements differentially affects adolescent male and female’s intentions to smoke.

The purpose of this study was to evaluate how cigarette advertisements that differ along the theme of relaxation (i.e., display images that are either lower or higher in relaxation valence) for several different brands of cigarettes interact with gender to predict intentions to smoke in a sample of never smoking adolescents. We used a 2 (gender) × 7 (brand: Virginia Slim, Kool, Newport, Marlboro, Camel, Winston, Salem) × 2 (relaxation valence: low, high) mixed model design; gender was obviously a between subjects factor and brand and relaxation valence were within subjects factors. We compared different brands because of data that indicate that different brands apparently were designed to appeal to different market segments (Le Cook et al., 2003). Relaxation valence was chosen given the impressive body of literature that has linked smoking initiation to stress (i.e., the converse of relaxation; see Kassel, Stroud, & Paronis, 2003), that affective responses to cigarette advertising may contribute to their impact on smoking (Romer & Jamieson, 2001), that female adolescents may be more responsive affectively to cigarette advertising (Shadel et al., 2004a), and from data that have indicated that tobacco companies specifically marketed some cigarette advertisements to display themes of relaxation (Le Cook et al., 2003). We hypothesized that themes of relaxation (high relaxation valence) would appeal more to female adolescents and be associated more with stronger intentions to smoke. However, we first explored whether or not there was a significant three-way interaction between gender, brand, and relaxation valence, given differences between brands in the markets they target and themes they may emphasize (see Le Cook et al., 2003). Because we were interested in future smoking intentions as the main dependent measure, we controlled for other social-cognitive predictors of intentions (see Bandura, 1997; Fishbein & Ajzen, 1975), smoking attitudes and smoking refusal self-efficacy. Finally, because smoking behavior (Johnston et al., 2005) and responses to cigarette advertising can differ by age (Shadel et al., 2004b), we also controlled for the effects of age in these analyses.

2. Method

2.1. Participants

 Adolescents were recruited using a variety of print media advertising in that led with the banner “What do you think about advertising?” and contained no information about cigarettes or cigarette advertising. These advertisements were placed in the local parent-oriented monthlies, daily university

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1 According to the theory of planned behavior (Fishbein & Ajzen, 1975) intentions play a key role in determining behavior outcome. Intention is a function of one’s attitudes toward a behavior, subjective norms, and perceived behavioral control (i.e., self-efficacy). These three components of behavioral intention lead to behavior outcome. Each of these variables has generated an impressive database when applied to smoking in adolescence. In several large samples of adolescents, behavioral intention to smoke was found to predict the progression to regular smoking (Wakefield et al., 2004). Attitudes and subjective norms are significant predictors of behavioral intention to smoke (O’Callaghan, Callan, & Baglioni, 1999), self-efficacy is a strong predictor of smoking intentions and behavior (O’Callaghan et al., 1999), and perceived risk of smoking-related illness also has been shown to influence smoking behavior in adolescents (Hampson, Andrews, Barckley, Lichtenstein, & Lee, 2000). Based on Azjen’s theory, this study looks at intention as a function of adolescents’ reactions to cigarette advertisements.
newspapers, and on the streets as fliers at bus terminals. Potential participants (or their parents) telephoned the study center, had the study parameters and requirements explained to them (i.e., that it was a study of advertising, and that potential participants would be exposed to several kinds of advertising that included advertisements for cigarettes), and completed a brief screening questionnaire to determine their eligibility. Inclusion criteria were as follows: ages between 11 and 17; no physical or psychiatric problem that would interfere with completing the study requirements; parental and adolescents’ written informed consent to participate; living in a non-smoking household, and self-report of never smoking a cigarette, even a puff. A total of 123 adolescents were screened for the study of which 92 were eligible to participate. The most common reason given for ineligibility was smoking status of either the adolescent or a member of the household in which the adolescent resided (65%). From this eligible sample of phone-screened adolescents, four were eliminated due to the fact that they later admitted to some experience with smoking. The final sample, then, was composed of 87 adolescents (52.9% female; 80.5% Caucasian)\(^2\) with a M age of 13.6 (S.D.=1.9) and who, on average, were in middle school (M grade in school=8.2, S.D.=2.0).

2.2. Procedures

2.2.1. Overview

Participants completed two sessions in a small group setting (2–10 per group); each session was separated by about 1 week. They were shown a total of 109 advertisements (40 in Session 1 and 69 in Session 2; all ads were presented in random order between different groups of participants) as power point slides and rated the model or models in each advertisement along a series of theory-driven mediators of the persuasion process, including relaxation value of the advertisement and how much the advertisement made them want to smoke (i.e., intentions, see below). At the end of Session 1, they completed a series of questionnaires that assessed demographics, psychosocial characteristics, smoking attitudes and experiences, and exposure to tobacco media. This current study was part of a larger study that had the overall goal of evaluating a number of focused questions regarding adolescents’ responses to smoking-related advertising; as such, only a subset of measures and advertisements was evaluated to answer the questions of interest to this particular study (described below). At the end of the study, participants were compensated with a $40 gift certificate to a local shopping mall and provided with written smoking prevention materials (National Institute on Drug Abuse, 2000).

2.2.2. Advertisement relaxation valence

For the purposes of this study, relaxation valence was defined as the degree to which a cigarette advertisement seeks to induce feelings of calm and stress-reduction through the depiction of relaxing scenes or situations as subjectively rated by our adolescent sample. Adolescent’s were asked, “How does this advertisement make you feel?” on a 1–10 scale (1=extremely nervous; 10=extremely relaxed). Advertisements were separated into two groups; high and low relaxation valence based on a

\(^2\) The representation of females and non-Caucasians compares favorably with that of the surrounding recruitment area (Allegheny County), in which 53% are female and 88% are Caucasian, 11% African-American, and 1% are Asian.
median split (Median=5.5); that is, advertisements were classified based on whether or not the average score on that advertisement was above (high relaxation valence; 27 advertisements) or below (low relaxation valence; 30 advertisements) the median for all of the advertisements included. For this study, only advertisements from 1990 through the present were analyzed under a twofold rationale: (1) adolescent smoking rates rose and peaked from approximately 1990 to 1997 before beginning the current decline and (2) advertising apparently geared toward adolescents became more prevalent during these years.

2.2.3. Covariates

(1) Demographics. Participant age was included.

(2) Smoking attitudes. Smoking attitudes were assessed during Session 1 using a 6-item scale. Participants responded to the stem, “Smoking is...” with the following bipolar items: very beautiful–very ugly; very good–very bad; very clean–very dirty; very safe–very dangerous; very nice–very awful; very pleasurable–very unpleasant. The anchors for this scale were 1 (positive pole) and 10 (negative pole) and all responses were summed so that a higher score reflects a more negative attitude toward smoking (scores could range from 6 to 60). These items have been used in prior studies of adolescent attitudes toward smoking and have been shown to be reliable, and predictive of smoking behavior in adolescents (Stacy, Bentler, & Flay, 1994); The alpha coefficient for this scale in this sample was .85 and the M smoking attitudes scale score was 28.9 (S.D.=2.3).

(3) Smoking refusal self-efficacy. Self-efficacy was assessed at baseline by participants’ response to the question “If one of your best friends offered you a cigarette, would you smoke it?” (1=Definitely Not; 10=Definitely Yes). Smoking refusal self-efficacy for this sample had M=1.32 (S.D.=.84).

2.2.4. Dependent measure

Intentions to smoke were measured after viewing each ad by answering the question “How much does this ad make you want to smoke?” with a 1–10 scale (1=Not at All; 10=A Lot).

3. Results

There were no significant associations between any of the covariates used in the analyses reported below (all p’s>.09).

A 2 (gender) × 7 (Brand) × 2 (Relaxation valence) repeated measures GLM (SPSS for Windows, v 12.0) was run with the covariates age, smoking attitudes, and smoking refusal self-efficacy. The three-way interaction between gender, brand, and relaxation valence was not significant (p = .361). Neither the two-way interaction of brand and relaxation valence (p = .145) nor the two-way interaction of brand and gender (p = .988) was significant. Therefore, cigarette brand was not a significant moderating factor in the analyses. None of the main effects (i.e., for gender, brand, and relaxation valence) were significant (all p’s>.10). However, a significant two-way interaction between gender and relaxation valence emerged (F=6.129, df=1, 82, p = .015). In order to more specifically determine the source of this significant interaction, we plotted mean smoking intentions as a function of brand and relaxation valence
for females (Fig. 1) and males (Fig. 2). As can be seen from the figures, female adolescents rated cigarette advertisements that were higher in relaxation valence (i.e., more relaxing advertisements) as making them want to smoke more, compared to ads that were lower in relaxation valence. Smoking intentions of male adolescents seemed not to be affected by the relaxation valence of the cigarette advertisements.

Fig. 1. Female intentions to smoke by brand based on relaxation value.

Fig. 2. Male intentions to smoke by brand based on relaxation value.
4. Discussion

Adolescent smoking rates remain unacceptably high (Johnston et al., 2005). About 25% of all adolescents who experiment with smoking become regular smokers and of those, approximately one-third will die from a smoking-related health problem (WHO, 2002). Cigarette advertising has been found, in several studies, to be associated with adolescent smoking initiation (Choi et al., 2002; Evans et al., 1995; Pierce et al., 1991, 2002; Sargent et al., 2000). Moreover, adolescent males and females appear to have been differentially targeted by cigarette advertising (Carpenter et al., 2005), with corresponding effects on their smoking behavior (Pierce et al., 1994). Studies have suggested that adolescent males and females respond differently to the gender-related themes in cigarette advertising (Shadel et al., 2004a), but little other information about gender differences in response to cigarette advertising is available.

In this study, we found that male and female adolescents respond differently to the relaxation valence of cigarette advertisements (i.e., degree to which advertisements emphasize themes of relaxation). In particular, advertisements that displayed themes that were highly relaxing were associated with increased intentions to smoke among female adolescents only; male adolescents responded within similar levels of intentions to smoke, regardless of the level of relaxation valence of cigarette advertisements. No specific brand effects were found among the seven different brands shown during the study. These findings were strengthened by the addition of the covariates of age, self-efficacy, and smoking attitudes. Past research has suggested that female adolescents are more responsive to cigarette advertising images in general (Covell et al., 1994) and shown that cigarette advertisements that emphasize feminine themes are associated with more positive affective reactions among adolescent females specifically (Shadel et al., 2004a). The current findings are important in that they provide more specific evidence about features of cigarette advertising imagery, degree to which themes of relaxation are emphasized, differentially appeal to female adolescents and are linked to smoking intentions. Moreover, brand being advertised did not affect these results. Thus, themes of relaxation portrayed in cigarette advertising, regardless of brand, would seem to pose an especially important risk for adolescent females. Policy-oriented tobacco control efforts might therefore profitably lobby for further restrictions on the content of cigarette advertising and interventions regarding advertising awareness may want to focus specifically on adolescent females.

Several limitations to this study need to be noted. First, the sample was composed of a reactively recruited group of never smoking adolescents. The results may not generalize to a population-based sample of adolescents nor to adolescents with different levels of experience with smoking. Second, none of the adolescent never smokers in this study had their self-reported smoking status verified. The utility of biochemical verification of adolescent smoking self-reports is open to some debate (Mermelstein et al., 2002). Nonetheless, it is possible that some adolescents misreported their smoking and this could have had an effect on the results. Third, although the design included a number of different advertisements crossing a diverse array of brands from the last 15 years, the results may not apply to all brands, all cigarette advertisements, or advertisements from earlier periods in time. Fourth, although we found significant effects, it is important to note that there was probably a “floor” effect on intention ratings. The sample was, after all, composed of a low risk group of adolescents who had no experience with smoking. Thus, there was probably a limit to what a simple exposure to cigarette advertisements in a laboratory setting would contribute to smoking intentions. Fifth, the measure of smoking intentions was composed of a single item, so measurement error may have prevented us from detecting stronger effects. Finally, because the design was a cross-sectional and largely correlational design (i.e., we did not explicitly manipulate exposure to advertisements of different relaxation valence in a more controlled
setting), we cannot say for certain that exposure to cigarette advertisements of higher relaxation valence cause adolescent never smoking females to want to smoke more. However, despite these limitations, the findings of this study provide additional and much needed understanding of how adolescent boys and girls respond to differences in cigarette advertising.

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